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SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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08/336,335 11/09/94 ELLIS

C2M1/0304

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J 0984.94C
EXAMINER
HANSEN, K

ART UNIT PAPER NUMBER

3209

DATE MAILED: 03/04/96

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

☐ This application has been examined ☒ Responsive to communication filed on 1/16/96 ☒ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), 0 days from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- | | |
|---|---|
| 1. <input type="checkbox"/> Notice of References Cited by Examiner, PTO-892. | 2. <input type="checkbox"/> Notice of Draftsman's Patent Drawing Review, PTO-948. |
| 3. <input type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449. | 4. <input type="checkbox"/> Notice of Informal Patent Application, PTO-152. |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474. | 6. <input type="checkbox"/> |

Part II SUMMARY OF ACTION

1. ☒ Claims 1 - 8 are pending in the application.
Of the above, claims _____ are withdrawn from consideration.
2. ☐ Claims _____ have been cancelled.
3. ☐ Claims _____ are allowed.
4. ☒ Claims 1 - 8 are rejected.
5. ☐ Claims _____ are objected to.
6. ☐ Claims _____ are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. ☐ Formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on _____. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☐ not acceptable (see explanation or Notice of Draftsman's Patent Drawing Review, PTO-948).
10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on _____, has (have) been ☐ approved by the examiner; ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed _____, has been ☐ approved; ☐ disapproved (see explanation).
12. ☐ Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. _____; filed on _____.
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

EXAMINER'S ACTION

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Status of Amendments

1. Acknowledgement is hereby made to applicant's Amendment filed January 11, 1996.

Claim Rejections - 35 USC § 103

2. Claims 1, 2, and 6 are rejected under 35 U.S.C. § 103 as being unpatentable over Medeksza in view of Applicant's Admitted Prior Art (AAPA), as discussed on page 6 of the specification and shown in fig. 1.

Medeksza teaches means for reciprocating a tool at an oscillatory rate relative to a rotating workpiece along the tool feed (transverse) direction to form intermittent chips dependent on factors such as tool position and angular displacement of the workpiece. Medeksza, however, does not teach reciprocating the workpiece along the transverse direction at an oscillatory rate. AAPA teaches a machine for lathing in accordance with the present invention including both a first and second carriages, means for guiding the carriages, and computer means for coordinating the workpiece rotational motion, the workpiece reciprocal motion (along a Y-axis as illustrated), and the lathing means reciprocal motion (along an X-axis) to infeed a workpiece along a transverse direction to lathe the workpiece to a predetermined shape, (as clearly shown in fig. 1). It would have been obvious to one of ordinary skill in the art, at the time of invention, to have

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modified Medeksza by providing computer means for reciprocating oscillation of a workpiece, as clearly suggested by AAPA, since AAPA clearly discloses means to effect such motion (17 and 19 in fig 1) in order to form chip segments that are readily disposable.

As to claim 2, see Medeksza fig.'s 2 & 3.

3. Claims 3-5, 7, and 8 are rejected under 35 U.S.C. § 103 as being unpatentable over Medeksza and AAPA, as applied to claim 1 above, and further in view of Dombrowski et al.

Medeksza and AAPA do not expressly recite the sine wave motion having an amplitude equal to one-half the feed rate. Dombrowski et al. does in col. 1, lines 57-60. It would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the operation of Medeksza and AAPA with the particular sine wave motion of Dombrowski et al. in order to provide for adequate chip separation.

The sinusoidal relationship recited in claims 4 and 5 would be a natural extension of the theories taught by either Medeksza or Dombrowski et al. As to claim 7, see Dombrowski et al. fig. 5, I.

Response to Amendment

4. Applicant's Remarks have been fully considered but they are not deemed to be persuasive.

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Applicant is arguing that AAPA does not teach the "superposition of a dynamically reciprocating path of the static spiral path achieved by the AAPA reciprocation". AAPA is cited to show the specific machine elements recited in the present apparatus claims are well known for use in this machining environment. Medeksza is relied upon to teach the concept of oscillatory motion between the tool and a workpiece, shown in fig. 1 for example, to produce segmented chips. Granted, neither reference teaches oscillatory motion of the workpiece, by itself. However, given the breadth of applicant's present claims requiring simply: "computer means...to reciprocate said workpiece along said transverse direction at an oscillatory rate to segment swarf removed...", it is believed that the ordinarily skilled artisan in possession of the teachings of both AAPA and Medeksza would have recognized the equivalence of moving either the tool or the workpiece in an oscillatory manner, since both accomplish the same function. This line of reasoning is applicable to the present claims even more so since it is the computer "control" means which is being emphasized, not any structure to effect the recited workpiece oscillatory motion, (which is arguably well known).

Applicant next argues Dombrowski et al. and states that he too lacks teaching workpiece oscillation and that the feed rate referenced therein is the feed rate of the tool whereas

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applicant's feed rate is for the workpiece. It is well known by those having ordinary skill in the turning art that it is the relative displacement between the workpiece and the tool along a direction of material removal (usually the radial direction with respect to the rotation axis of the workpiece) per workpiece rotation; that determines the feed rate (sometimes expressed as inches/rev or ipr). Therefore Dombrowski et al. clearly sets forth an equivalent sinusoidal relationship to that of applicant's since it doesn't matter whether the tool or the workpiece moves as long as there is relative motion between the two in the material removal direction. Additionally, the examiner never intended to say that Dombrowski et al. teaches workpiece oscillation, or it would have been relied upon to anticipate claim 1.

Applicant also points out that the Dombrowski et al. sinusoidal motion is along the direction of feed to a depth of penetration in the workpiece. This too may be the case, however, the relationship called for in the present claims which results in the intersection of sinusoidal crests and nadirs is clearly suggested in Dombrowski et al., as shown in fig. 5. The particular direction of tool or workpiece motion would be dependent on the characteristics of the workpiece being machined. In applicant's preferred embodiment, it is the face of a lens which is being machined so that spiral tool path motion on the

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face would be required. Applicant knowingly acknowledges that the particular oscillatory direction would be obvious. As stated at page 10 of the specification: "It will be obvious to those skilled in the art that, should it be desired to machine the edge of the lenses rather than the face of the lens, the oscillatory action could be applied along the X-axis rather than the Y-axis so to segment swarf...". With this in mind, it follows that Dombrowski et al. provides an adequate basis to render the particular sinusoidal relationship obvious.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth J. Hansen whose telephone number is (703) 308-2477. Inquiries of a

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general nature regarding the status of this application should be directed to the Group receptionist at (703) 308-1148.

Group FAX numbers are (703) 305-3579 or 305-3580. Any transmission which applicant does not want to be considered as an Official Response should clearly be marked as "DRAFT" and directed to the examiners attention. Consideration of a "DRAFT" response is limited due to priorities accorded to Official Responses. It is recommended that a telephone consultation be arranged with the examiner prior to submission of a "DRAFT" response.


KJH

February 28, 1996


M. RACHUBA
SUPERVISORY PATENT EXAMINER
GROUP 3200
2/29/96